

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	Youhao Xu, et al.	Examiner:	Jennifer A. Leung
Serial No.:	09/553,990	Art Unit:	1764
Filed:	April 20, 2000	Docket:	23242
For:	RISER REACTOR FOR FLUIDIZED CATALYTIC CONVERSION		Confirmation No.: 5903

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION UNDER 37 C.F.R. §1.132

Sir:

I, **Zhiguo Li**, hereby declare as follows:

1. I am a Chinese Citizen residing in Beijing, People's Republic of China.
2. In 1982, I graduated from the Department of Chemical Engineering of Tianjin University and received my Bachelor's degree of Organic Chemical Engineering. Presently, I am a manager of the Scientific and Technical Division in Refining Project Department of SINOPEC in charge of implementing new technologies in refineries of SINOPEC and have held that position for the last 15 years.
3. Since 1999, I have supervised the implementation of new technologies for effectively reducing the contents of olefin and sulfur in gasoline in refineries of SINOPEC. These new technologies have been implemented in direct response to stricter and stricter environmental regulations with respect to gasoline in China. One such technology, also known as "Maximizing Iso-Paraffins (MIP)", significantly decreases the olefin content in gasoline through a creative design of a stepped riser, also known as an "MIP apparatus". The MIP apparatus includes two reactor zones wherein the first (lower) reaction zone is designed for high temperature and short residence time to produce olefins from cracking hydrocarbons, and the

second (upper) reaction zone is designed for low temperature and long residence time to transform olefins into iso-paraffins. The MIP apparatus is designed such that the ratio of the second reaction zone diameter versus the first reaction zone diameter is in the range from 1.5:1 to 5:1. It is my understanding that the MIP apparatus is the subject matter disclosed and claimed in the above-identified patent application.

4. In 1999, we began marketing the MIP apparatus for SINOPEC. Prior to 1999, there was no riser reactor in the market that was capable of reducing olefin content in gasoline. The MIP apparatus has a low revamp cost and low energy consumption as compared to conventional riser FCC reactors. Due to the synergism of olefin reduction and iso-paraffin production, as well as lower revamp cost and lower energy consumption, the MIP apparatus has received high acclamation from many refineries in China.

5. After we began marketing SINOPEC's MIP apparatus, we sold a total of 32 MIP apparatus, including apparatus sold in 2006 to QianGuo Petrochemical Company of China National Petroleum Corporation (CNPC). 24 of these 32 MIP apparatus are presently operating and producing product, and the others are under construction. Customers which have adopted the MIP apparatus in their refineries include SINOPEC, China National Petroleum Company (CNPC), China National Offshore Oil Corporation (CNOOC), YANCHANG PETROLEUM GROUP and CHEMCHINA. Among these customers, CNPC is China's largest integrated oil and gas company, and CNOOC is China's third largest National Oil Company, next to CNPC and SINOPEC. All of these customers are highly satisfied with the MIP apparatus since the same effectively reduces the olefin in gasoline, while simultaneously enhancing the yield of desirable products. These customers are also satisfied with the ease of operating the MIP apparatus, as well as the low cost and decreased energy consumption associated with the MIP apparatus.

6. Currently, there are a total of 40 apparatus in China capable of reducing olefin content in gasoline, of which SINOPEC's MIP apparatus account for 32 of the 40 apparatus, i.e., 80% of the market share; the other eight apparatus are Two-Stage Riser Fluidized Catalytic Cracking apparatus also known as "TSRFCC" reactors.

7. I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and that further that these statements were made with knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that willful false statements may jeopardize the validity of the Application or any patent issuing therefrom.

Dated this 6 day of Nov. 2008.

Shiguo Li
Signature